

REMARKS

Claims 24-56 have been elected for examination. Claim 56 and claims 1-23 have been canceled. However, Applicants explicitly reserve the rights to pursue the subject matter in these claims in one or more continuation or divisional applications. No new matter is introduced by this Response, and thus entry thereof is respectfully requested.

I. Claims Rejection Under 35 U.S.C. §102

Claims 24-41 are rejected under 35 U.S.C. §102(e) as allegedly anticipated by U.S. Patent No. 5,837,115 to Austin et al (“Austin”). In particular, the Actions states that Austin discloses a device for separating molecules, including constricted regions and unconstricted regions that form a channel where the unconstricted regions are sufficiently large for a larger molecule to obtain its equilibrium shape as it moves through the channel in response to a driving force, and the constricted regions are sufficiently small to influence the shape of the molecules moving through the channel. The rejection on this basis is respectfully traversed.

Applicants respectfully point out that Austin does not include any discussion of constricted regions that are sufficiently small to influence shape of molecules as they pass through the constricted regions, and unconstricted regions that are sufficiently large to permit relaxation of a molecule to its equilibrium shape. On the contrary, Austin discusses the use of tortuous path arrays through which molecules are flowed, and as a result of which, are separated roughly by size. In contrast to the present invention, this is not related to the relative size of constricted and unconstricted regions, but instead, is a function of the tortuousness of the path that is required to be followed. As a result, larger molecules that are more likely to be caught up on the obstacles in the path, will move more slowly through the path than smaller molecules.

The rejection also cites Figures 16 and 17 of Austin as providing disclosure of such constricted and unconstricted regions. However, Applicants respectfully point out that the structures illustrated in Figures 16 and 17 are used for the flowing and sorting of cells, rather than for the separation of individual molecules (See col. 21, lines 35-56). As such, the dimensions of either of the constricted or unconstricted regions would not be expected to be sufficiently small to influence the shape of individual molecules flowing therethrough. Specifically, the size of individual cells is orders of magnitude larger than equilibrium shapes of individual molecules. Further, nothing in

Austin suggests adjusting the dimensions of such structures for separating individual molecules or that any such adjustment would provide success in such separation. In fact, Austin explicitly teaches that the ostensibly constricted regions of the structure described therein be at least as large as the radius of gyration of molecules passing through that space (See col. 11, lines 5-9). Such dimension would not be expected to influence the shape of the molecule as is required by claims 24, 51, 53 and their respective dependants. With respect to the remaining claims, Austin's teaching of passages having dimensions that are at least equal to the radius of gyration of the molecules passing therethrough, is directly inapposite to the claimed invention that requires dimensions smaller than the radius of gyration or the spherical shape of the small molecules being separated. Accordingly, it is clear that at best, Austin fails to teach the present invention and in case of many claims, Austin teaches directly away from the present invention. As Austin fails to teach or teaches away from the invention claimed in the independent claims, it cannot be said to anticipate the dependent claims having additional limitations. Accordingly, the rejection over Austin under 35 U.S.C. §102(e) should be withdrawn.

II. Claims Rejection Under 35 U.S.C. §103

Claims 42 and 43 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Austin in view of U.S. Patent No. 5,304,487, to Wilding et al. ("Wilding"). In particular, it was alleged that Austin taught all limitations of the rejected claims but failed to teach using an optical microscope as a detector. Applicants respectfully traverse the instant rejection on the same basis as that applied above. In particular, Austin fails to teach the separation of molecules through the use of constricted and unconstricted regions having the properties of the present claims, as noted above. Wilding, for its part, similarly fails to remedy these deficiencies of Austin, again describing only a tortuous path structure for achieving separation of particles.

III. Double Patenting Rejection

Claims 24-41 and 44-56 stand rejected on the ground of nonstatutory obviousness-type double patenting over U.S. Patent No. 6,635,163. In particular, it was alleged that while the instant claims are not identical to the claims of the '163 patent, they are not patentably distinct in that they both recite structures of alternating constricted and unconstricted regions. The rejection also states that the main difference between the claims is that the instant claims mention the transformation of

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shape of the molecules in the separation. Applicants respectfully submit that the instant rejection should be withdrawn for substantially the same basis offered in overcoming the rejection over Austin, *supra*. Notwithstanding the distinctions between the instant invention and that of the '163 patent, in the interest of advancing the present application to issue, Applicants have submitted herewith an appropriate terminal disclaimer, thereby obviating this rejection.

For all of the foregoing reasons, it is believed that the instant rejections are overcome and their withdrawal is respectfully requested.

CONCLUSION

Applicants submit that this paper fully addresses the Office Action mailed January 17, 2007. Should the Examiner have any questions, the Examiner is encouraged to contact the undersigned attorney at (650) 849-3383. A petition to extend the due date of this response for one month and the requisite fees accompany this Response. However, the Commissioner is authorized to charge any additional fees which may be required, including petition fees and extension of time fees, to Deposit Account No. 23-2415 Docket No. 33205-709.

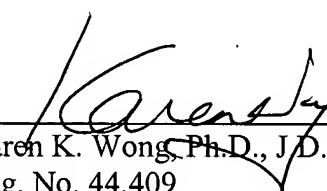
Respectfully submitted,

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